

What is claimed is:

1. A three-dimensional model analyzing apparatus for analyzing a physical property of a three-dimensional model, comprising:

5            an information receiving unit which receives information on a three-dimensional model as an object to be analyzed;

            an edge detecting unit which detects an edge of said three-dimensional model;

10           a smoothing unit which smoothes said edge; and  
            an analyzing unit which analyzes said three-dimensional model in accordance with a finite element method after said edge is smoothed by said smoothing unit.

15           2. A three-dimensional model analyzing apparatus according to claim 1, wherein said edge detecting unit detects only at least one edge having an angle which does not exceed a predetermined amount.

20           3. A three-dimensional model analyzing apparatus according to claim 1, wherein said smoothing unit transforms said edge into a curved surface having a predetermined radius of curvature.

25           4. A three-dimensional model analyzing apparatus according to claim 3, wherein said analyzing unit analyzes said three-dimensional model in accordance with the finite

element method after dividing the three-dimensional model into a plurality of hexahedral elements which are formed with edges each having a length shorter than said predetermined radius of curvature.

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5. A three-dimensional model analyzing apparatus according to claim 4, further comprising a number-of-divisions varying unit which varies the number of said plurality of hexahedral elements,

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said analyzing unit determines a converged value of said physical quantity based on a local maximum of calculated values of said physical quantity which are obtained while increasing the number of said plurality of hexahedral elements by said number-of-divisions varying unit.

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6. A computer-readable storage medium storing a program which makes a computer execute a process for analyzing a physical property of a three-dimensional model, said program further makes said computer realize:

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an information receiving unit which receives information on a three-dimensional model as an object to be analyzed;

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an edge detecting unit which detects an edge of said three-dimensional model;

a smoothing unit which smooths said edge; and

an analyzing unit which analyzes said three-

dimensional model in accordance with a finite element method after said edge is smoothed by said smoothing unit.